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ABSTRACT

Previous research has suggested a high level of sexual activity among students, often involving unprotected intercourse. To better understand what factors contribute to consistent use of effective contraception, the relationship between sexual knowledge and sexual behavior and the relationship of sex guilt to sex knowledge were investigated in a pilot study involving 142 college students enrolled in a human sexuality course. Students completed the knowledge portion of the Sexual Knowledge and Attitude Scale, the Mosher Sex Guilt Scale, and the Sexual Behavior Checklist, as well as measures of self-esteem and a demographic and personal history questionnaire. The knowledge, guilt, and behavior measures were readministered at the end of the quarter. Results showed that, in general, actual knowledge had no bearing on sexual behavior; however, those who were more active perceived themselves as knowing more. Sexually active males, but not females, perceived themselves as knowledgeable about contraception. Those with high sex guilt tended to be less sexually active, but also less knowledgeable. The findings suggest a need for research to look at factors most directly relevant to responsible sexual behavior for unmarried, sexually active young people. (JAC)

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Sex Knowledge, Sex Guilt and Sexual Behavior Among University Students

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Sex Guilt, Sex Knowledge and Sexual Behavior
Among University Students

For a number of years the Alan Guttmacher Institute has been gathering information on sexual behavior among teenagers. In a recent (1981) update of their research, they reported that at present over 12 million teenagers between the ages of 13 and 19 have engaged in sexual intercourse. (An earlier report gave an age range of 15 to 19, so obviously the behavior is making its way into a younger segment of the population.) It seemed to us that if one added to this number unmarried college students above the age of 19, the figure would increase substantially.

Given the extent of premarital sex among young people, one immediately wonders about contraceptive use. In the literature it has been estimated that among the teenagers alone, up to 80% fail to use effective contraception. Ignorance is often suggested as a reason for failure to use contraception, but studies have shown (e.g., Fisher, Byrne, Edmunds, Miller, Kelley, & White, 1979) that even those who are well-informed and aware of the availability of contraceptives, for example at a university health service, still fail to employ birth control measures consistently. The overall estimate of the percentage of sexually active college students regularly using contraception is only about 50% (Anderson, McPherson, Beeching, Weinberg, & Vessey, 1978; Fisher, 1979; Foreit & Foreit, 1979). We have found that among our own students, failure to use contraception at first intercourse was as high as 100% for one male sample,

and 70% for a female sample. Up to 68% of females and 74% of males reported that they sometimes engaged in intercourse without contraception.

A number of reasons have been reported for students' failure to employ contraception, including not having it convenient when needed, the unexpected nature of the intercourse (Oswalt, 1974), excuses like "I just got carried away," or "I was drunk," or as one of our male respondants reported, "I don't have sex often enough to make contraception worthwhile." Other factors which have been suggested as being related to contraceptive use are traditional versus non-traditional sex roles (Scanzoni, 1976), one's sense of personal worth (Fox, 1977), and stability of the relationship (Fisher et al., 1979). Thus, it appears that a number of variables may be involved in the decision to use or not use contraception.

When one considers the high level of sexual activity (much of which involves unprotected intercourse) among students, the potential for problems is clear. Not only is unplanned pregnancy a definite possibility, but the spread of sexually transmitted disease is highly likely. The recent herpes scare has made students uncomfortably aware of this last potential. Given this situation, it seems logical to direct our research efforts not so much toward dealing with problems after they occur, but toward preventing them before they arise. One way to do this seems to be to try to understand what factors contribute to consistent use of effective contraception.

One area that we have been interested in is the role of

sex knowledge in determining sexual behavior. For example, is increased sexual activity related to increased knowledge of sexuality? What role does knowledge play in effective contraceptive use? Many of the questions submitted to us in the undergraduate sexuality classes indicate a definite lack of knowledge on the part of students. This is particularly alarming when one considers the high level of sexual activity on campus.

In a previous study (Pollack & Brown, 1981) we found that in a sample of introductory psychology students, scores on a measure of sex knowledge (Miller & Fisk, 1969) averaged about 60% correct responses. Males reported engaging in significantly more varied sexual behaviors than did females, resulting in a greater discrepancy between knowledge and behavior for males. However, for both sexes, we found significant positive correlations between knowledge and behavior, indicating that greater sexual knowledge is indeed a concomitant of more varied sexual activity, at least for this sample.

Another factor which has been of recent interest is that of sex guilt (e.g., Gerrard, 1977). Studies have shown that high sex guilt appears to inhibit sexual activity (e.g., Galbraith & Mosher, 1968; Langston, 1976; Mosher & Cross, 1971; Upchurch, 1978). Guilt is also shown by married couples who perceive intercourse with contraception as being "without purpose" in that there is no intent for pregnancy to occur (Sandberg & Jacobs, 1971). It is possible that similar perceptions exist among the unmarried, so that sex guilt may be

implicated in contraceptive decisions. Upchurch reported findings that guilt may be a particularly important factor among college females. The very fact of having contraceptives available implies a certain amount of premeditation with respect to possible intercourse. This foreknowledge may be construed by some as indicating intentional intercourse and perhaps even promiscuity. The result is a sense of guilt which interferes with the consistent use of contraception. It seems that intercourse is not so guilt-producing if one can attribute it to being carried away in a fit of passion, but if one plans it, that's bad. (Not only is it "bad", it is downright unromantic, according to the current script.)

In the present pilot study, we were interested not only in looking at the knowledge and behavior relationship, but also the relationship of sex guilt to knowledge and sexual behavior.

Our sample consisted of students enrolled in an undergraduate course in human sexuality. The students (81 males and 61 females) who volunteered to participate in the study were given five questionnaires at the beginning of the quarter, including the knowledge portion of the Sexual Knowledge and Attitude Scale (Lief & Reed, 1971), the Mosher Sex Guilt Scale (Mosher, 1961, 1966, 1968), the Sexual Behavior Checklist (Cowart & Pollack, 1979), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and a questionnaire intended to elicit background information and personal history. At the end of the quarter, the knowledge, guilt and behavior measures were again administered. Frequency data are based on those who responded to particular

items. Correlational analyses were based on those who completed all measures (53 males and 46 females).

Results

Results were analyzed separately for males and females. As we had found in our earlier study (Pollack & Brown, 1981), an examination of means showed that males had engaged in significantly more varied behaviors than had females ($\bar{X}$ = 23.5 for males and 17.8 for females, $t = 3.77$, $p < .0001$). There was a slight increase in variety of behaviors over the quarter for both sexes. Scores on the knowledge measure averaged about 70 percent correct responses for both sexes on the pretest, and 78 percent on the post-test, representing a significant gain ($t = 6.94$, $p < .0001$) over the quarter. This is consistent with other findings in the literature dealing with effects of sex education courses on sex knowledge. What we didn't expect was that in this sample, contrary to our earlier findings, there was no relationship between knowledge and behavior. At present we have no explanation for this -- it could be that, with greater knowledge, the relationship washes out.

Using Pearson product-moment correlations (Table 1) we found that in both sexes self-rated sex knowledge and self-rated contraceptive knowledge were correlated with each other ($r = .59$, $p < .0001$ and $r = .64$, $p < .0001$ for males and females respectively). Self-rated sex knowledge was correlated with sexual behavior for males ($r = .52$, $p < .0001$) and females ($r = .34$, $p < .05$) even though measured knowledge was not. For females both types of self-rated knowledge were correlated with measured knowledge

($r = .46$, $p < .005$ for sex knowledge and $r = .54$, $p < .0001$ for contraceptive knowledge) but this relationship did not hold for males. This finding indicates that perhaps females may have a more accurate percpeption of what they actually know than do males. In males only, self-rated contraceptive knowledge was correlated with sexual behavior ($r = .39$, $p < .005$). Partial correlations (i.e., looking at both self-rated and measured sex knowledge with behavior held constant, and at the relationship of each type of knowledge with behavior, holding the other type of knowledge constant) reduced these relationships slightly, but did not change the significant associations.

When we looked at guilt, we found that for both sexes, sexual behavior and guilt were negatively correlated ($r = -.33$, $p < .05$, and $r = -.42$, $p < .01$ for males and females respectively, providing support for the view that although sex guilt may decrease behavior, it does not stop it.

Because of differences in male and female forms of the sex guilt scale, the sexes were not directly comparable on this measure. However, for both males and females, guilt decreased slightly over the course of the quarter. In females, high sex guilt was related to lower self-ratings of both contraceptive ($r = -.52$, $p < .0005$) and sex knowledge ($r = -.49$, $p < .001$). This suggests that if high sex guilt reduces but does not stop sexual activity, then those high-guilt females who do engage in sexual activity may have less contraceptive knowledge and thus be at high risk as poor contraceptors.

Finally, we found a positive correlation between self-esteem

and sexual behavior for females ($r = .35$, $p < .05$). Perhaps the actual experience of sex does not result in the negative consequences that traditional upbringing projects (e.g., loss of reputation, failure to find "true love", etc.).

This sample appeared to be fairly active sexually. Fifty-eight percent of females and 91 percent of males reported having had intercourse. Of these, 41 percent of females and 27 percent of males reported having intercourse more than twice a week.

In looking at the subsample of those who reported that they were sexually active, we found that on the occasion of first intercourse, 49 percent of females used some form of contraception, while only 30 percent of males did so. Among those who did use contraception, the condom was the most used method at first intercourse (74 percent for males and 62 percent for females). The pill was the second most used method for females (29 percent), with the second most used method for males being withdrawal (13 percent).

At the most recent intercourse, 88 percent of females who responded reported using some form of contraception, while only 54 percent of males did so. At least the females, who have more to lose, are apparently beginning to protect themselves from unplanned pregnancy. Finally, 32 percent of females and 74 percent of males reported that they sometimes engage in intercourse without any contraception at all. In a group of students with relatively high levels of sexual behavior, this behavior is frightening. Female students seem to be doing

better than males in terms of protecting themselves, but there is still a lot of risk-taking going on, apparently.

As a whole, this undergraduate class had some rather interesting characteristics (Table II). Typically, they were white, Protestant, and came from families with incomes of over $36,000 per year. For both sexes, the largest percentage of respondents rated their sexual knowledge (males 53%, females 61%) and contraceptive knowledge (45% for males, 43% for females) as "good". Clearly, reading materials and friends constituted the most important source of sexual and contraceptive information, with females obtaining more sex information from reading (56%) and males obtaining more from friends (68%). For contraceptive information, both sexes relied more heavily on reading (70% for males, 52% for females), with friends and classes also being fairly important sources. For females, physicians were fairly important as well.

At first glance, it would appear encouraging that 92% of males and 97% of females saw responsibility for providing contraception as a joint agreement of both partners. However, in discussions in our sexuality classes, it is clear that for many males, this egalitarian attitude applies only to steady relationships. For one-night stands, the female is definitely on her own.

In summary, it appears that for this sample, at least, actual knowledge has no bearing on sexual behavior; however, those who are more active tend to perceive themselves as knowing more. The more sexually active males view themselves as knowing

more about contraception, but for females this view is not apparent. Whether this self-perceived contraceptive knowledge in males translates into more effective contraceptive use is not clear.

Finally, guilt seems to be an important factor with respect to both behavior and knowledge, such that while those who exhibit high guilt tend to be less sexually active, they also have less knowledge so that when they do engage in sexual activity, they run a greater risk of negative consequences.

Most of the literature to date concerning contraceptive use among unmarried young people has been descriptive. We are taking this type of research into the domain of experimentation and are presently carrying out a study in which we are manipulating variables in an attempt to look at factors which might be directly relevant to more responsible sexual behavior on the part of the unmarried, sexually active young person.

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TABLE I

Correlation Coefficients for Male and Female University Students

Based on beginning of quarter scores

	Self-rated Sex Knowledge	Self-rated Contraceptive Knowledge	Sex Knowledge	Self-esteem	Sexual Behavior	Sex Guilt
Self-rated Sex Knowledge	--	.6421*** .0001	.4637** .0012	--	.3416* .0358	-.4938** .0006
Self-rated Contraceptive Knowledge	.5994*** .0001	--	.5362*** .0001	--	--	-.5160** .0003
Sex Knowledge	--	--	--	--	--	--
Self-esteem	--	--	--	--	.3547* .0312	--
Sexual Behavior	.5171*** .0001	.3875** .0045	--	--	--	-.4213** .0094
Sex Guilt	--	--	--	--	-.3318* .0163	--

MALES

FEMALES

* $p < .05$
** $p < .01$
*** $p < .0001$

Self-rated sex knowledge
Self-rated contraceptive knowledge
Measured sex knowledge (SKAT)
Self-esteem (Rosenberg)
Measured sexual behavior (Cowart-Pollack)
Sex guilt (Mosher)

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TABLE II

Percentages of students responding to selected items on the Fertility Regulation Questionnaire

	Percentage of Responses* Males	Females
1. Self-rating of general knowledge of sex		
a. poor	0%	0%
b. fair	3%	2%
c. average	19%	26%
d. good	53%	61%
e. excellent	26%	9%
2. Reported obtaining most sex information from		
a. books and reading materials	64%	56%
b. friends	68%	49%
c. parents	21%	25%
d. physicians	4%	11%
e. classes	14%	9%
f. other sources	9%	7%
3. Self-rating of contraceptive knowledge		
a. poor	0%	7%
b. fair	6%	5%
c. average	23%	18%
d. good	45%	43%
e. excellent	26%	28%
4. Reported obtaining contraceptive information from		
a. books and reading materials	70%	52%
b. friends	31%	25%
c. parents	15%	8%
d. physicians	6%	28%
e. classes	25%	39%
f. clinics	10%	20%
g. other sources	6%	0%
5. Viewed responsibility for providing contraception as joint agreement of both partners	92%	97%
6. Ranked the pill as present first choice	75%	72%
7. Ranked condoms as present first choice	19%	15%
8. Reported having, at some time, engaged in intercourse without contraception	74%	51%
9. Reported that they currently sometimes engage in intercourse without contraception	74%	32%

* Percentages will not equal 100 because of rounding, the omission of some categories, and because some items had more than one category checked. Percentages are based upon the number of persons responding to each item.

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